HTTP Tunneling

The HTTP tunneling mechanism is frequently used in the Internet environment. It is used for sending and receiving the packets through the Web server (to traverse firewalls and/or proxies).

Entire Screen Builder supports tunneling with the following HTTP servers: Microsoft Internet Information Server and Apache Web Server.

This chapter covers the following topics:

- Setting Up Tunneling
- Customizing the Viewers

Notes:

1. The Microsoft Internet Explorer will limit the number of simultaneous connections that it will make to a single HTTP server. If you exceed this limit, the requests will block until one of the current connections has completed. For more details, see *Microsoft Knowledge Base Article - Q183110* at *http://support.microsoft.com/support/kb/articles/q183/1/10.asp*.
2. If you want to enable tunneling for the standalone version of the Terminal Viewer, see *Defining the Entire Screen Builder Server* in the *Terminal Viewer* documentation.
3. The XML Version can only be used with the ISAPI DLL. See *Configuring the XML Version* for detailed information.

Setting Up Tunneling

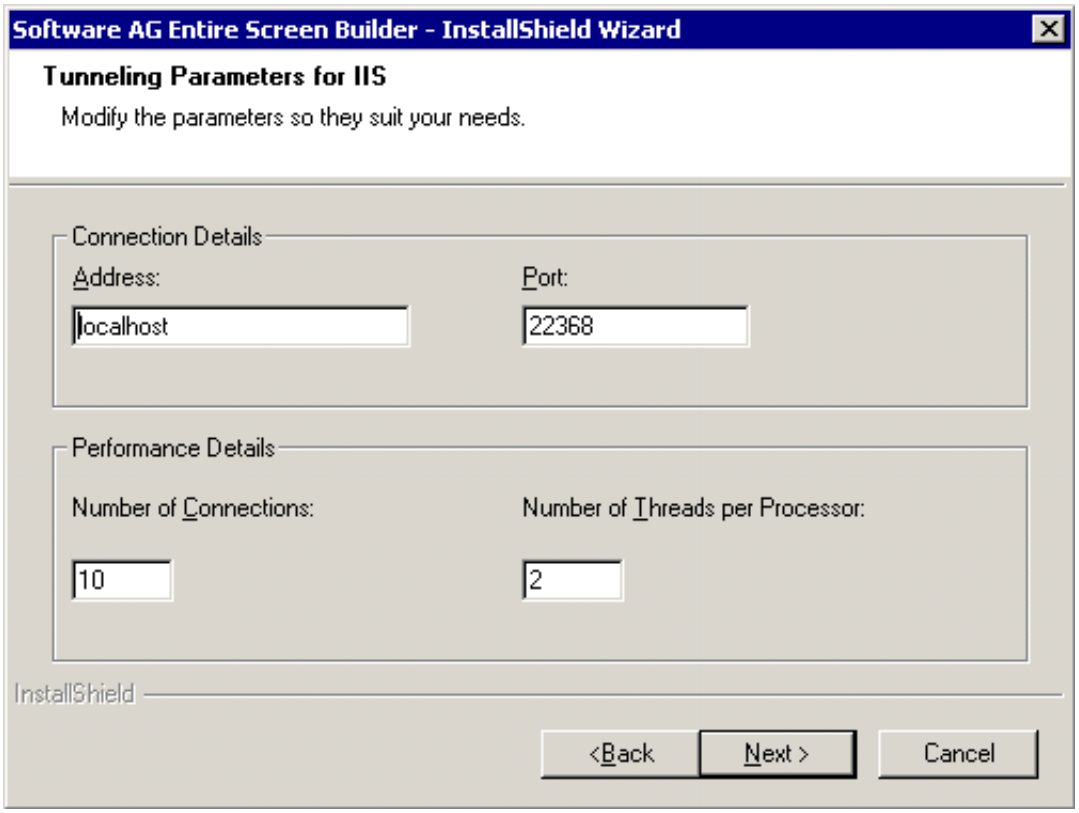
For tunneling, the Entire Screen Builder server extensions have to be installed for the HTTP server that you want to use. It is possible to use an HTTP server that is located on another machine (i.e. not on the machine on which the Entire Screen Builder Server has been installed).

The following topics describe how to set up tunneling for the different HTTP servers:

- Microsoft Internet Information Server under Windows
- Apache Web Server 2.0 under Windows
- Apache Web Server 1.3 and 2.0 on Solaris

Microsoft Internet Information Server under Windows

When you install Entire Screen Builder it is also possible to install the extensions for the Internet Information Server. The following dialog appears during installation when you have chosen to install this feature (custom installation):



Note:
If you want to change any values provided in this dialog box after installation, you have to change the corresponding parameters in the *Tunneling.reg* file. This file can be found in the folder *\Program Files\Software AG\Entire Screen Builder 5\server extensions\tunneling*. To import the new values into your registry, you have to execute (double-click) the modified *Tunneling.reg* file.

Specify the following information:

Address

Specify the IP address or host name of the machine on which the Entire Screen Builder Server is running.

Port

Specify the port number.

Important:
For address and port, specify the same information that has been defined in the System Management Hub. See *Tunneling Server* in Entire Screen Builder's *System Management Hub* documentation.

Number of Connections

Specify the number of connections in the pool.

Number of Threads per Processor

Specify the number of worker threads to handle the communications to hosts and clients and to generate screens. This value should be increased when the responsiveness of the server drops (i.e. the time for a new screen to be processed for a client increases but the server processor time as seen in the Windows Task Manager remains low).

The following options are intended for problem analysis. They can only be changed directly in the *Tunneling.reg* file and should only be used under supervision of your technical support.

TraceDir

Specify the trace directory.

EnableTrace

Specify 1 to enable traces, or 0 to disable the traces. The trace directory must exist before this parameter can be set to 1.

Web Viewer

The following steps are required if you plan to use Entire Screen Builder's Web Viewer:

1. In your server's home directory (usually, this is *C:\Inetpub\wwwroot*), create the logical name (alias) "ESBWebviewer".
2. Copy all files from the program folder ..*Entire Screen Builder 5\web viewer* to the folder linked to the logical name that was created in the previous step.

Windows Viewer

For Entire Screen Builder's Windows Viewer, no setup steps are required.

Terminal Viewer (Browser Version)

The following steps are required if you plan to use Entire Screen Builder's Terminal Viewer:

1. In your server's home directory (usually, this is *C:\Inetpub\wwwroot*), create the logical name (alias) "ESBTerminalviewer".
2. Copy all files from the program folder ..*Entire Screen Builder 5\terminal viewer* to the folder linked to the logical name that was created in the previous step.

Apache Web Server 2.0 under Windows

Copy the following files from the *Windows\Server Extensions\Tunneling\Apache* folder of the Entire Screen Builder CD to your Apache server *modules* folder:

- *APIERR.dll*
- *Esbap2api.dll*
- *mtcutil.dll*
- *mtcmemorypool.dll*
- *NswMessages.dll*
- *mtctrace.dll*

Modify the Apache Web Server configuration file *httpd.conf* as follows:

1. Set the directive KeepAlive to On.
2. Set the directive KeepAliveTimeout to a value greater than 20.

   This directive corresponds to Entire Screen Builder's tunneling poll time. See *Overview of Client Control Properties* in the *User Exits* documentation.
3. Set the directive MaxKeepAliveRequests to 0 (zero) to allow an unlimited amount of requests during one session.
4. Add the following lines at the end:

```
LoadModule esb_module modules/esbap2api.dll
<Location /esbhandler>
   EsbParms IP_ESB_server port_number_ESB_server
   TracesParms traces_directory 0/1
   SetHandler esb-handler
</Location>
```

   The first directive loads the DLL (or shared library on UNIX).

   The second directive defines the following parameters:

   `EsbParms`

   - Specify the IP address or host name of the machine on which the Entire Screen Builder Server is running.
   - Specify the port number.

   For the above IP and port values, specify the same information that has been defined in the System Management Hub. See *Tunneling Server* in Entire Screen Builder's *System Management Hub* documentation.

`TracesParms`

- These parameters are intended for problem analysis. They should only be used under supervision of your technical support.

  Specify the trace directory, and set the flag either to 1 to enable traces, or to 0 to disable the traces. The trace directory must exist before the flag can be set to 1.

There must not be a folder named "esbhandler" below your *document-root*.

5. Optionally - translate the name of your image folder by adding an Alias directive like the following:

   ```
   Alias /name_of_image_reposistory/ "full_path_to_your_images/"
   ```

   You have to add the above Alias directive after the following:

   ```
   # Aliases: Add here as many aliases as you need (with no limit). The format is
   # Alias fakename realname
   ```

Web Viewer

The following steps are required if you plan to use Entire Screen Builder's Web Viewer:

1. Create a folder called *ESBWebviewer* below your *document-root*.
2. Copy all files from the folder ..*Entire Screen Builder 5\web viewer* to the new folder.

Windows Viewer

For Entire Screen Builder's Windows Viewer, no setup steps are required.

Terminal Viewer (Browser Version)

The following steps are required if you plan to use Entire Screen Builder's Terminal Viewer:

1. Create a folder called *ESBTerminalviewer* below your *document-root*.
2. Copy all files from the folder ..*Entire Screen Builder 5\terminal viewer* to the new folder.

Apache Web Server 1.3 and 2.0 on Solaris

When the Entire Screen Builder Server is installed on a Solaris machine, take the files from the *unix\sun\serverextensions\apache* folder of the Entire Screen Builder CD. This folder contains further folders: *32bits* and *64bits*.

When using the 32 bits version of Apache, copy the following files from the *32bits* folder to your Apache Web Server *libexec* directory:

- *libapierr32.so*
- *libesbap2api32.so* (for version 2.0 only)
- *libesbapapi32.so* (for version 1.3 only)
- *libesbnsapi32.so*
- *libmtcmemorypool32.so*
- *libmtcmessages32.so*
- *libmtctrace32.so*
- *libmtcutil32.so*

When using the 64 bits version of Apache, copy the following files from the *64bits* folder to your Apache Web Server *libexec* directory:

- *libapierr.so*
- *libesbap2api.so* (for version 2.0 only)
- *libesbapapi.so* (for version 1.3 only)
- *libesbnsapi.so*
- *libmtcmemorypool.so*
- *libmtcmessages.so*
- *libmtctrace.so*
- *libmtcutil.so*

Add your Apache Web Server *libexec* directory to your LD_LIBRARY_PATH environment variable.

Modify the configuration file *http.conf* as described above for the Windows platform, but use the extension for shared libraries for Solaris:

```
LoadModule esb_module modules/filename
```

where *filename* is to be replaced with one of the following:

- *libesbap2api32.so* for version 2.0, 32, bits
- *libesbapapi32.so* for version 1.3, 32 bits
- *libesbap2api.so* for version 2.0, 64, bits
- *libesbapapi.so* for version 1.3, 64 bits

Web Viewer and Terminal Viewer (Browser Version)

Copy the Entire Screen Builder viewers as described above for the Windows platform.

Customizing the Viewers

When tunneling is used, server address and port number are not used by the GUI viewers. Any defined values are ignored.

The values for the tunneling type are:

M	if a Microsoft Internet Information Server is used (with ISAPI).
A	if an Apache Web Server is used.

The tunnelling poll time is the time in seconds the viewer polls the tunneling server for new data (asynchronous messages and screens).

Normally, the HTTP port is 80, or 440 for HTTPS.

How to enable tunneling for the different viewers is described in the topics below:

- Windows Viewer
- Web Viewer
- Terminal Viewer (Browser Version)

A detailed description of the properties mentioned below can be found in the *Overview of Client Control Properties* which is part of the *User Exits* documentation.

Windows Viewer

The following steps are required to configure Entire Screen Builder's Windows Viewer:

1. On your web server, create a logical name (alias) for the location in which the images are to be stored (usually "ESB_Repository").
2. Invoke the Windows Viewer. See *Invoking the Windows Viewer* in the *GUI Viewers* documentation.
3. In the resulting dialog box, select a connection and choose the **Edit** button.

   The Client Control Properties dialog box appears.
4. Select the HTTP page.
5. Specify the HTTP server address and the HTTP server port used for tunneling.
6. Make sure that the **HTTP tunneling** check box is selected.
7. Choose the **OK** button.

Web Viewer

Add the following entries to your customized HTML pages for the end user (for example, *ExampleEndUserPage.htm* which is provided in the Entire Screen Builder folder *web viewer*):

```
<param name="HTTPSERVER" value="Name_or_IpAddress_of_HttpServer">
<param name="HTTPPORT" value="PortNumber">
<param name="TUNNELING" value="1">
<param name="TUNNELINGTYPE" value="M">
<param name="TUNNELINGPOLLTIME" value="20">
```

See also: *Customizing the Web Viewer*.

Terminal Viewer (Browser Version)

Add the following entries to your customized HTML pages for the end user (for example, *ExampleTerminalViewer.htm* which is provided in the Entire Screen Builder folder *terminal viewer*):

```
<param name="SERVERNAME" value="Name_or_IpAddress_of_HttpServer">
<param name="PORTNUMBER" value="PortNumber">
<param name="USEHTTPCONNECTION" value="1">
<param name="TUNNELINGTYPE" value="M">
<param name="POLLTIMEOUT" value="20">
```

See also: *Customizing the Terminal Viewer*.